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The Long Neglect of Genetic Discoveries and the Criterion of Prematurity

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In a symposium in honor of the centennial of the publication of Gregor Mendel's pioneer experiments in genetics, held at the meetings of the American Philosophical Society in Philadelphia on April 23, 1965, I delivered a paper entitled "A Century of Biochemical Genetics." After remarking on the complete lack of knowledge in Mendel's time of the biochemical nature of any hereditary material and even of the important role of the nuclei of cells in the transmission of hereditary traits, I continued with these words:

> Every historian of genetics, indeed every biologist of this century, has expressed wonder at the long neglect of Mendel's discoveries, and many reasons have been suggested. Perhaps it has not been realized as it should be that this prolonged neglect of a scientific discovery is not at all unusual; even the science of genetics abounds in such. Two of these relate, respectively, to the biochemical nature of the genetic materials and to the biochemical nature of gene action.[1]

I then recounted the history of Friedrich Miescher's discovery of the chemical basis of heredity and of Sir Archibald Garrod's discovery of no less than four "inborn errors of metabolism" in each of which a specific enzyme deficiency was identified as the cause.

In the case of Mendel, as I argued in 1953,[2] the neglect was most probably due to failure to comprehend the significance and the generality of Mendel's results, rather than the inaccessibility of his publication or the lack of interest in plant breeding at the time, reasons sometimes suggested. The *Verhandlungen* of the *naturforschender Verein* in Brünn were in fact generally known and quite widely distributed, and Mendel's two papers were cited by Hermann Hoffmann in 1869, as well as by Focke later.[3] As for a lack of interest in the subject of plant

1. Bentley Glass, "A Century of Biochemical Genetics," *Proc. Am. Phil. Soc., 109* (1965), 227-236; quotation from p. 227.

2. Bentley Glass, "The Long Neglect of a Scientific Discovery: Mendel's Laws of Inheritance," in *Studies in Intellectual History,* by George Boas et al. (Baltimore: Johns Hopkins Press, 1953).

3. Hermann Hoffmann, *Untersuchungen zur Bestimmung des Werthes von Species und Varietät: Ein Beitrag zur Kritik der Darwin'schen Hypothese* (Giessen,

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